TECHNICAL SPECIFICATIONS
DIVISION 3

SECTION 03300

CAST IN PLACE CONCRETE

1. GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Testing Laboratory Services: Section 01410

1.2 QUALITY ASSURANCE

A. Delivery: Furnish a certificate with each truckload of concrete product delivered to the site, indicating the composition and quality of the mix. Include size and weight of each aggregate, amount of cement, amount of water and amount and kind of any additives included in the concrete, grout fill, or mortar.

B. Standards: All applicable standards of the following:

1. American Concrete Institute - ACI

2. Concrete Reinforcing Steel Institute - CRSI

3. Uniform Building Code - UBC

4. Other local codes or criteria noted on drawings.

C. Concrete Consistency:

1. Test each truckload of concrete for slump. Calibrate each mixer or haul unit to be used by measuring slump near the beginning and near the end of the discharge cycle. Mix units determined by the Engineer to be deficient in mixing capability shall not be used in subsequent deliveries. Slump testing procedures per ASTM C143.

2. Consistency per values below with tolerance of $\pm$ 1 inch.

a. 2-3 inches slump for structural elements 12 inches and greater in thickness.

b. 2-4 inches slump for structural elements less than 12 inches in thickness and columns.

1.3 SUBMITTALS

A. Concrete mix design (for each concrete type used) by independent laboratory, including strength tests of 3 cylinders proportioned to mix design formula.

B. Certification of quality of all concrete, mortar, and grout mix design ingredients including admixtures with supporting test data, mill quality control results and all information specified and requested by the Engineer.

C. Curing materials and methods proposed with certification statements of materials quality.

D. Trip tickets for each load of concrete, grout or mortar indicating weights of all materials and additives used in the batch.

E. Location of construction joints not shown on the plans.

1.4 STORAGE OF MATERIALS

A. Maintain in continuously clean environment and in manner required to maintain homogeneity.

B. Cements, grouts, and mortar containerized and kept in dry humidity environment. Engineer shall reject materials which have hardened or show any evidence of initial hydration.

2. PRODUCTS

2.1 CONCRETE

A. ASTM C94 and mix design approved by Engineer.

B. Compression strength and water cement ratio: The minimum compressive strength and cement content of concrete shall be not less than that shown in the tabulation that follows. The Engineer may order the cement content for any class of concrete to be increased over the quantity specified in the tabulation if it is determined that such increase is necessary to attain the required strength. Such increased quantities of cement, if so ordered, shall be furnished by the Contractor at no additional cost to the Owner.

C. Cement ASTM C150 Type I or II

D. Aggregates:

1. Conform to ASTM C33.

2. Maximum wear 50% at 500 revolutions, AASHTO T96.

E. Water:

1. Clear free from injurious amounts of oil, acid, salt, alkali, organic matter, or other deleterious substances.

F. Admixtures:

1. Use only those specified in approved mix design.

2. Air entrain all concrete unless elsewhere excepted, with agent conforming to ASTM C260. Freshwater concrete air content between 4% and 6% by volume.

3. Apply in strict accordance with manufacturer's printed instructions.

4. No chloride contents permitted.

5. Compatible with coatings specified elsewhere.

2.2 AGGREGATE FOR MORTAR

A. Conform to 2.1 except gradation as follows:

Sieve Size Square Opening	Percent Passing By Weight
No. 4	95 - 100
No. 8	80 - 90
No. 16	55 - 97
No. 30	30 - 60
No. 50	12 - 30
No. 100	0 - 10

2.3 GROUT

A. For equipment and column bases and drilled in anchors use nonshrink, nonstaining, premixed grout, Masterflow 713 by Master Builders; or equivalent. Mix in accordance with the manufacturer's directions.

B. For Fill: Driest consistency practical composed of 1 part Portland Cement 3 parts sand (by volume). Aggregate proportions may be varied slightly to give the most workable mix.

C. For placement at base of walls, one part fine aggregate, one part cement. In a thick cream consistency.

D. Cure in accordance with manufacturer's recommendations.

3. EXECUTION

3.1 MIXING AND TRANSPORTATION

A. Ready-Mixed Concrete: Conform to ASTM C94 Alternate No. 3.

3.2 PLACING

A. Deliver only in sufficient quantities required for specified time interval use and placement. Discard concrete having initial set before placement. No remixing with water or supplementing with other materials will be permitted once initial set has occurred. Initial set as evidenced by typical hydration characteristics to be determined by Engineer and Contractor quality assurance representative.

B. Place as nearly as possible to final position to avoid segregation of the materials and displacement of reinforcement. Placement shall be completed within 30 minutes after water is first added to the mix. However, at the Engineer's discretion if climatic and temperature conditions are suitable and when the concrete is continually agitated, the time may be extended to 1-1/2 hours.

C. Place no concrete in the absence of the Engineer.

D. Do not change consistency (slump) for a given placement without the Engineer's written permission.

E. Keep open trough and chutes of steel or steel lined, clean and free from coatings of hardened concrete.

F. Do not drop concrete a distance of more than 5 feet unless approved in writing by the Engineer.

G. Cold Weather Placement:

1. Concrete shall be placed only when the temperature is at least 40°F., and rising, unless permission to pour is obtained from the Engineer.

2. Material shall be heated and otherwise prepared so that batching and mixing can proceed in full accord with the provisions of this Specification.

3. Suitable means shall be provided for maintaining the concrete at a temperature of at least 50°F for a period of at least the first five (5) days and at a temperature above freezing for the remainder of the specified curing period, except that where high-early-strength cement is used, this period may be reduced to 72 hours. The methods proposed for heating the materials and protecting the concrete shall be approved by the Engineer.

4. Salt, chemicals, or other materials shall not be mixed with the concrete for the purpose of preventing freezing. Accelerating agents shall not be used.

H. Hot Weather Placement:

1. The temperature of fresh concrete at the time of placement during hot weather shall be a maximum of 90°F to prevent an accelerated setting of the concrete.

2. A retarding densifier admixture shall be used when the high expected atmospheric temperature for the day is 85°F or above. Admixture shall be used in accordance with the manufacturer's recommendations.

I. Placing Concrete Against Earth:

1. Unless otherwise called for on the drawings, earth cuts shall not be used as forms for vertical surfaces without the prior approval of the Engineer.

2. Concrete placed on or against earth shall be placed only upon or against firm, damp surfaces free from frost, ice and standing or running water. Concrete shall not be placed upon mud, or upon fills until the required compaction has been obtained.

J. Placing Concrete Slabs:

1. Smooth subgrade surface irregularity with thin film of masonry sand prior to placing vapor barrier.

2. Edge and side laps to be in continuous contact. Place materials to maintain tight lap contact.

K. Depositing Concrete in Water: Concrete may not be deposited in water.

3.3 COMPACTING

A. Compact all concrete with high frequency internal vibrators immediately after placing.

B. Use external vibrators for compacting concrete where the concrete is inaccessible for adequate compaction by internal vibrators; construct forms sufficiently rigid to resist displacement or damage from external vibration.

C. Penetrate concrete with a sufficient number of vibrations immediately after it is deposited. Move vibrator throughout the mass so as to thoroughly work the concrete around reinforcement and embedded fixtures and into corners and form recesses. Vibrate the minimum time required to compact the concrete in place and not cause separation of the materials. Concrete shall be compacted to maximum density as determined by tests for yield. Select vibrator size to efficiently accommodate reinforcement clearances.

3.4 CURING AND PROTECTION

A. Maintain at site ready to install, before actual concrete placing begins, all equipment and materials needed for optimum concrete curing and protection; maintain extra vibrators on standby in case of malfunction of any unit.

B. Protect finished surfaces or edges from stains, abrasions and breakage during the entire construction period.

C. Protect all concrete from accelerated drying and excessive heat at all times. Close all galleries, conduits and other formed openings through the concrete during the entire curing period and as long thereafter as practicable to prevent drying of concrete by air circulation.

D. Install slab curing covers immediately after initial set or as soon as free water has disappeared from the surface of the concrete after finishing or surfacing.

3.5 REPAIRING CONCRETE

A. Immediately after removal of forms, break back all form ties and inspect concrete surfaces for defects. Complete repair of defects within 48 hours after removal of forms. No repairs shall be made until the defects have been reviewed and method of repair approved by the Engineer.

B. Remove all defective or damaged concrete, including honeycombed, sand streaked, or fractured material from the area to be repaired. Chip out areas to one inch minimum depth. Edge shall be squared with the surface to eliminate feather edges.

C. Before placing the repair material obtain Engineer inspection. Clean area free of chipping dust, dried mortar, and all other foreign materials.

D. Keep surfaces to be repaired continuously wet for at least three hours prior to placing new concrete or mortar. No free water on the surface when the repair material is placed.

E. Apply a bonding agent to the area to be repaired before placing repair material. Apply the bonding agent per manufacturer's published instructions attached to container.

F. For all repair surfaces permanently exposed to atmosphere use white cement in proportions found by trial to be effective in producing a color that, in the hardened patch, will match the surrounding concrete surface.

G. Make repairs or patch form tie holes by (1) dry-packing, (2) filling with concrete, or (3) plastering with mortar or a combination of all 3 in conformance with the following:

1. Use the dry-pack method for holes at least one inch deep where the depth is equal to, or greater than the smallest surface dimension of the defect, such as cone-bolt or form tie holes, and for narrow slots cut for the repair of cracks. Do not use the dry-pack method where lateral restraint cannot be obtained. Place and pack dry-pack mortar in layers having a compacted thickness of approximately 3/8 inch. Solidly compact each layer over its entire surface by use of a hardwood stick and hammer. Do not use metal tools for compacting. Compact surface just flush with adjacent area. Do not use steel finishing tools or water to facilitate finishing.

2. Use concrete replacement for (1) holes extending entirely through concrete sections; (2) for holes larger than one square foot and deeper than four inches in which no

reinforcement is encountered; (3) for holes larger than ½ of one square foot where reinforcement is exposed. Concrete used for replacement shall be of the same strength and mixture as used in the structure except for color matching as specified above.

3. Use mortar replacement for holes too wide to dry-pack and too shallow for concrete replacement and when approved by the Engineer for other conditions not covered above.

H. Cure all repairs with the same methods as new concrete.

3.6 CONCRETE FINISHES AND TOLERANCE

A. General Finish:

1. Finish concrete surfaces to conform with the following table unless otherwise noted on the drawings.

2. Formed Surfaces — System

Exterior - Exposed and One Foot Below	F4
Exterior - Below Grade	F2

3. Slabs

Tops of exterior footings in contact with soil or backfill	U2
Exterior - Except as Otherwise Noted	U5

B. Formed Surfaces: Finishes for formed surfaces shall be as designated below:

1. Finishing for F1 and F2 finishes consists of concrete repairing only, which is to be completed within 48 hours after forms are removed.

2. Finishing for F3 and F4 finishes shall immediately follow concrete repairing and be completed within 96 hours after the forms are removed. Except where forms are left in place for the duration of the curing period, finishing shall be done during the curing period, keeping the interruptions to the curing process as short as possible. Where forms left on prevent finishing during the curing period, finishing shall be completed within 48 hours after forms are removed. All finishes shall receive a minimum of 24 hours of curing after completion of the finish. Curing shall be carefully done so as not to disturb or remove any of the mortar.

3. Finish F2: Smooth, formed concrete surface with all fins, projections and loose material removed and defective concrete and form tie holes and other holes over ½ inch deep, repaired and filled. Forms in contact with concrete shall be plywood or steel.

4. Finish F4: Exceptionally smooth, formed concrete surface with all fins, joint marks, bulges, projections and loose material removed. Sandblast to expose air bubble holes, surface pits and similar minor surface defects. Defective concrete, form tie holes, holes from defective forms, and other holes too large to fill by "sack rubbing" shall be repaired and filled. Finish with sack rubbing as follows.

   a. Thoroughly wet the surface and begin treatment while the concrete is still damp. Use 1 part cement, 2 parts (by volume) of sand which will pass a No. 16 screen, and enough water so that mortar consistency will be that of thick cream. Rub mortar thoroughly over the area with clean burlap or a cork or sponge rubber float to fill all pits, surface holes and air bubble holes. While the mortar in the pits is still plastic, rub the surface with a dry mix of mortar. This dry rub shall remove all excess mortar and place enough dry material in the pits to stiffen and solidify the mortar flush with the surface. No material shall remain on the surface except that within the pits. When the ambient temperature is 85°F or higher, keep the mortar continuously damp by means of a fog spray for 24 hours during the setting period. Take care that the fog spray does not remove any of the mortar. Break finish for any area only at natural breaks in the finished surface.

   b. Rub all surfaces that are to be finish painted with a carborundum stone to provide a smooth texture and to remove any latent material on the surface. Pre-blast walls to remove any residual form oils prior to finishing when walls are to be finish painted.

   c. Form requirements shall be the same as Finish F-3.

C. Unformed Surfaces:

1. Working on unformed surfaces in various finishing operations shall be held to the minimum required to produce the desired finish. Use of any finishing tool in areas where water has accumulated will not be allowed. Work in these areas shall be delayed until the water has been absorbed, has evaporated, or has been removed by draining, mopping, dragging off with a loop of hose, or by other means. In no case, shall cement or mixture of cement and sand be spread on the surface to absorb excess moisture nor shall such materials or water be added to facilitate troweling. Joints and edges, unless specified otherwise, shall be carefully finished with edging tools.

2. Finishes for unformed surfaces shall be as designated below:

   a. Finish U2: A wood float finish. Follow treatment specified for finish U1 by floating either by hand, or by power driven equipment. Floating to be started after some stiffening has taken place in the surface concrete and the moisture or "shine" has disappeared. Work the concrete no more than necessary to produce a surface known as "wood float finish" which is uniform in texture and free of screed marks. Do any necessary cutting and filling during the floating operations.

b. Finish U5: Broom finish. Follow the treatment specified for finish U3 by roughening the surface immediately after troweling with a fiber bristle broom in a direction perpendicular to the direction of traffic. Broom grooves not more than 1/16 inch deep. After brooming, neatly tool all joints and edges to configuration.

D. Tolerances:

1. Unless otherwise required, allowable tolerances for concrete surfaces shall be in accordance with those shown in the table below. Surface irregularities are classified as either "abrupt" or "gradual". Offsets caused by displaced or misplaced form sheathing, lining, or form section or by defective form lumber shall be considered as abrupt irregularities. All others are classed as gradual irregularities. Gradual irregularities shall be measured with a template consisting of a straight edge for plane surfaces and its equivalent for curved surfaces.

2. The length of the template for testing formed surfaces shall be 5 feet. The length of the template for unformed surfaces shall be 10 feet. Maintain a 5 foot length and 10 foot length steel template on the job site.

3. Maximum allowable irregularities in concrete:

Finish Designation	Irregularity in Inches Gradual	Abrupt
F1	1	½
F2	½	1/4
F3	1/4	3/16
F4	3/16	3/16
U1 thru U6	1/8	1/8

3.7 UNSATISFACTORY CONCRETE

A. Any concrete placed which fails to meet or exceed the specified strength requirements as determined from molded cylinders or cores, or to meet the density or surface requirements, or which has been frozen during placing or curing, shall be removed and replaced with satisfactory materials at the Contractor's expense.

B. Method of determining unsatisfactory concrete: Visual appearance characteristic of rain or freeze damage to concrete which is apparent to the Engineer.

* * * END OF SECTION * * *

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

PREPARED BY
URS CONSULTANTS, INC.
SACRAMENTO, CA.

SEPTEMBER 1996

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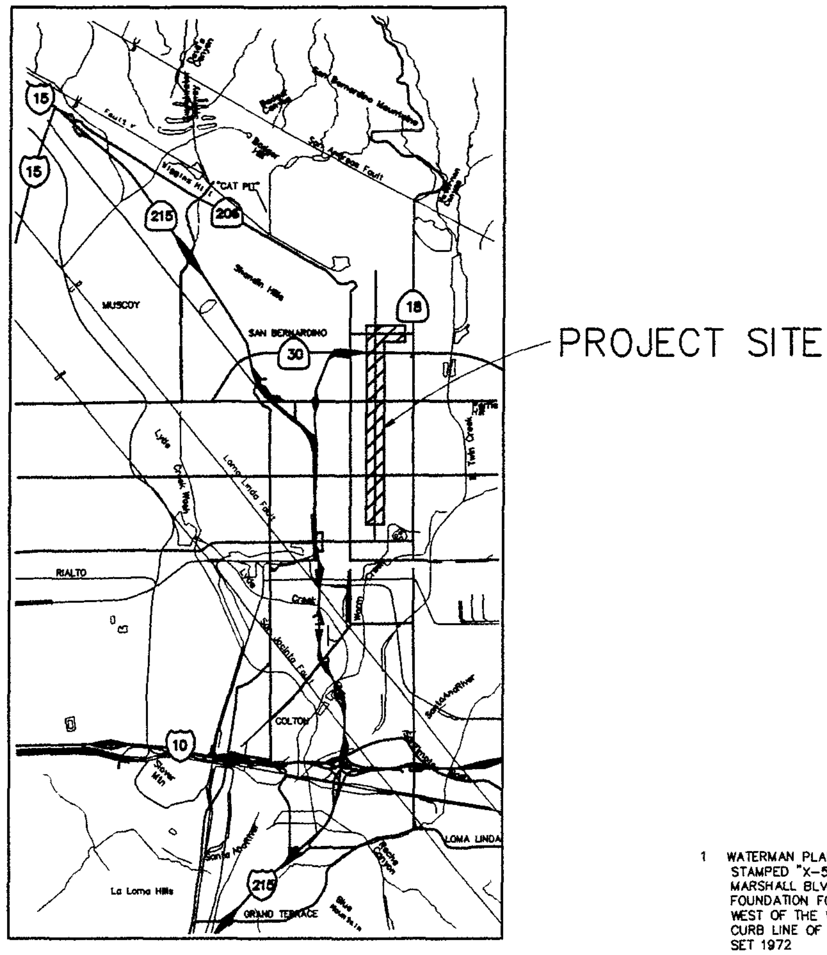
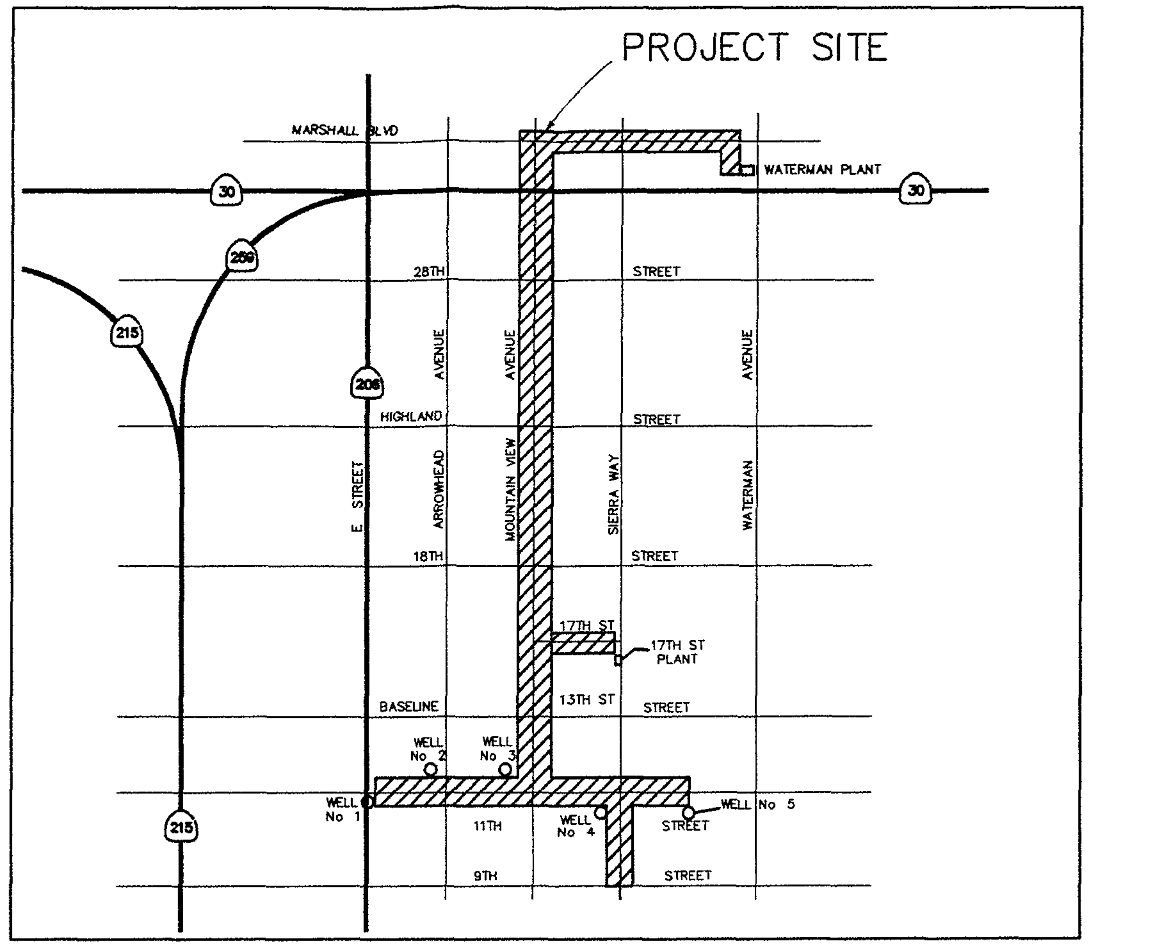


VICINITY MAP



LOCATION MAP

PRIVATE ENGINEER'S NOTES TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS TO THE BEST OF OUR KNOWLEDGE THERE ARE NO UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUIT OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIBILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER

DIG ALERT

DIAL TOLL FREE

1-800-422-4133

AT LEAST TWO DAYS BEFORE YOU DIG

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

GENERAL NOTES

1 WATERMAN PLANT SITE BENCHMARK (ELEV 1240 802 FEET) IS A BRASS DISK STAMPED "X-522" LOCATED AT THE SOUTHWEST CORNER OF SIERRA WAY AND MARSHALL BLVD IN THE TOP OF THE SOUTHEAST CORNER OF A CONCRETE FOUNDATION FOR A LIGHT STANDARD AND OVERHEAD STREET LIGHT, 0 9 FEET WEST OF THE WEST CURB LINE OF SIERRA WAY, 13 9 FEET SOUTH OF THE SOUTH CURB LINE OF MARSHALL BLVD CITY OF SAN BERNARDINO DESIGNATION A6-2, SET 1972

2 CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR PROTECTION OF EXISTING FACILITIES FROM DAMAGE DUE TO CONTRACTOR'S OPERATIONS

3 CONTRACTOR AGREES TO ENSURE THAT ALL WORK IS PERFORMED IN A MANNER WHICH MINIMIZES DISTURBANCE TO OWNER'S ONGOING ACTIVITIES AT THE SITE CONTRACTOR SHALL ENFORCE STRICT DISCIPLINE AND GOOD ORDER AMONG ITS EMPLOYEES AT ALL TIMES CONTRACTOR SHALL NOT EMPLOY ANY PERSON UNFIT OR UNSKILLED IN ANY PROJECT ASSIGNED TO HIM

4 OSHA PERMIT IS REUIRED FOR TRENCHES OVER 5 FT IN DEPTH PRIOR TO START OF TRENCH EXCAVATION

5 ALL WATERLINE CONNECTION POINTS AND CRITICAL UTILITY CROSSINGS POINTS SHALL BE EXPOSED AND ACCURATELY LOCATED AT THE START OF CONSTRUCTION AND THE SBMWD SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO THE CONTINUATION OF WORK

6 THE CONTRACTOR SHALL NOT OPEN MORE TRENCHES THAN CAN BE PROPERLY PROSECUTED IN A DAY'S OPERATION ANY TRENCH UNAVOIDABLY LEFT OPEN DURING THE HOURS OF DARKNESS OR OVER A WEEKEND SHALL BE FENCED WITH A 6-FOOT CHAIN LINK FENCING AND PROPERLY LIGHTED OR BRIGE BY A SBMWD APPROVED TRAFFIC PLATE WITH REFERENCE TO THE W A T C H MANUAL

7 THE CONTRACTOR SHALL REINSTALL PAVEMENT MARKINGS AND STRIPPING THAT HAVE BEEN DISTURBED BY HIS OPERATIONS

8 THE CONTRACTOR SHALL PROVIDE SAFE AND CONTINUOUS PASSAGE FOR LOCAL PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES WITH REFERENCE TO THE W A T C H MANUAL.

9 TRAFFIC SIGNALS FUNCTIONS SHALL BE THE RESPONSIBILITY OF THEE CITY OF SAN BERNARDINO, DEPARTMENT OF PUBLIC WORKS, HOWEVER, THE CONTRACTOR IS REQUIRED TO GIVE 48-HOUR NOTICE PRIOR TO ANY CONSTRUCTION THAT MAY DAMAGE OR AFFECT BURIED TRAFFIC DETECTORS

10 THE CONTRACTOR SHALL SO CONDUCT HIS OPERATIONS AS TO OFFER THE LEAST POSSIBLE OBSTRUCTION AND INCONVENIENCE TO THE PUBLIC, AND HE SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAT HE CAN PROSECUTE PROPERLY WITH DUE REGARD TO THE RIGHTS OF THE PUBLIC CONVENIENT ACCESS TO DRIVEWAYS, HOUSES AND BUILDINGS ALONG THE LINE OF WORK SHALL BE MAINTAINED TEMPORARY CROSSINGS SHALL BE PROVIDED AND MAINTAINED IN GOOD CONDITION NOT MORE THAN ONE CROSSING OR INTERSECTING STREET OR ROAD SHALL BE CLOSED AT ANY ONE TIME WITHOUT THE APPROVAL OF THE WATER DEPARTMENT ENGINEER THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUCH FENCES, BARRIERS, DIRECTIONAL SIGNS, LIGHTS, AND FLAGMEN AS ARE NECESSARY TO GIVE ADEQUATE WARNING TO THE PUBLIC AT ALL TIMES OF ANY DANGEROUS CONDITIONS TO BE ENCOUNTERED AS A RESULT OF THE CONSTRUCTION WORK, AND TO GIVE DIRECTIONS TO THE PUBLIC

11 ALL REMOVALS IN PAVED AREAS SHALL BE SAW CUT ON A NEAT, STRAIGHT LINE PARALLEL TO THE PIPE LINE THE CUT EDGE SHALL BE PROTECTED FROM CRUSHING AND ALL BROKEN EDGES SHALL BE RECUT PRIOR TO PAVING OPERATIONS

12 DUST SHALL BE CONTROLLED AT ALL TIMES BY APPROVED METHODS.

13 PUBLIC STREETS SHALL BE KEPT CLEAN AND FREE FROM DIRT AND/OR DEBRIS THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED IN STREET CLEANING NECESSITATED BY HIS OPERATION

14 ALL TRENCH BACKFILLS SHALL BE TESTED AND CERTIFIED BY A SOILS ENGINEER PRIOR TO ACCEPTANCE

15 THE CONTRACTOR SHALL NOT MAKE ANY CONNECTION TO THE EXISTING SBMWD DISTRIBUTION SYSTEM WITHOUT FIRST GAINING WRITTEN PERMISSION TO DO SO FROM THE WATER DEPARTMENT ENGINEER IN THE EVENT THAT PERMISSION IS GRANTED, A SBMWD INSPECTOR MUST BE PRESENT ON SITE TO WITNESS SAID CONNECTION(S) TEST PLATES SHALL BE INSTALLED ON THE NEW CONSTRUCTED SIDE OF ALL MAIN CONNECTION POINTS THE CONTRACTOR MAY USE ALTERNATIVE METHODS

ALL FLUSHING, CHLORINATION, AND TESTING SHALL BE PERFORMED EITHER BY (A) WATER TRUCK OR (B) HYDRANT-TO-HYDRANT CONNECTION THROUGH AN APPROVED BACKFLOW PREVENTION ASSEMBLY

16 ALL WATER MAINS AND APPURTENANCES SHALL BE PRESSURE TESTED AND DISINFECTED PRIOR TO ACCEPTANCE BY THE SBMWD

17 ALL TESTING AND DISINFECTION SHALL BE MADE IN THE PRESENCE OF THE INSPECTOR THE CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN TWENTY-FOUR (24) HOURS IN ADVANCE OF THE ACTUAL TIME OF TESTING AND/OR DISINFECTION SO THAT THE WATER DEPARTMENT ENGINEER OR DESIGNEE MAY OBSERVE THE PROCEDURE

18 IF THE PRESSURE TEST, CHLORINATION OR BACTERIOLGICAL TEST FAIL TO MEET THE REQUIREMENT OF THE SPECIFICATIONS, THE CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS, REPLACEMENTS OR REPETITION OF PROCEDURES AT HIS OWN EXPENSE

19 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAVEMENT REPLACEMENT FOR ALL TRENCH CUTS AND DAMAGE TO EXISTING PAVEMENT THE CONTRACTOR SHALL ALSO PATCH EXISTING TRENCH CUTS ON ELEVENTH STREET BETWEEN APPROXIMATELY 200 FEET WEST OF MT VIEW AND SIERRA WAY THE CONTRACTOR SHALL ALSO PATCH TRENCH CUTS IN SIERRA WAY BETWEEN ELEVENTH STREET AND NINTH STREET

20 THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND RELOCATION OF ALL SEWER LATERALS DAMAGED OR THAT REQUIRE RELOCATION AS A PART OF THIS PROJECT ALL SEWER LATERALS BELOW WHICH THE TRENCH IS EXCAVATED SHALL BE REMOVED AND REPLACED AFTER TRENCH COMPACTION EXCEPT THOSE LATERALS CONSTRUCTED OF CAST OR DUCTILE IRON

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — CIVIL

REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION

DESIGNED BY STL

DRAWN BY JW

CHECKED BY DHD

URS — URS Consultants, Inc — CONSULTING ENGINEERS — SAN BERNARDINO CALIFORNIA

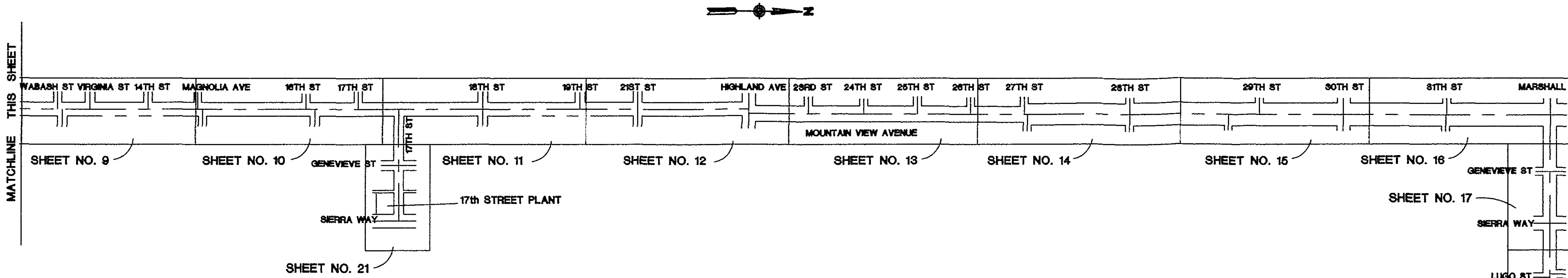
JOB NO 62370-60

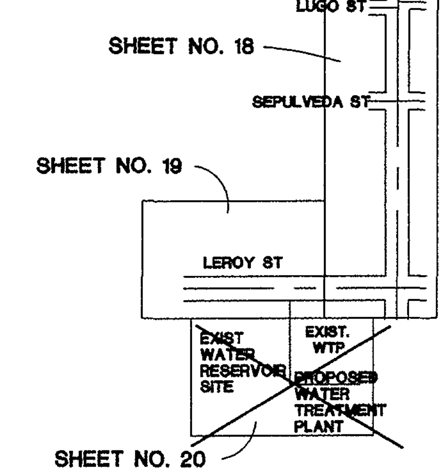
NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

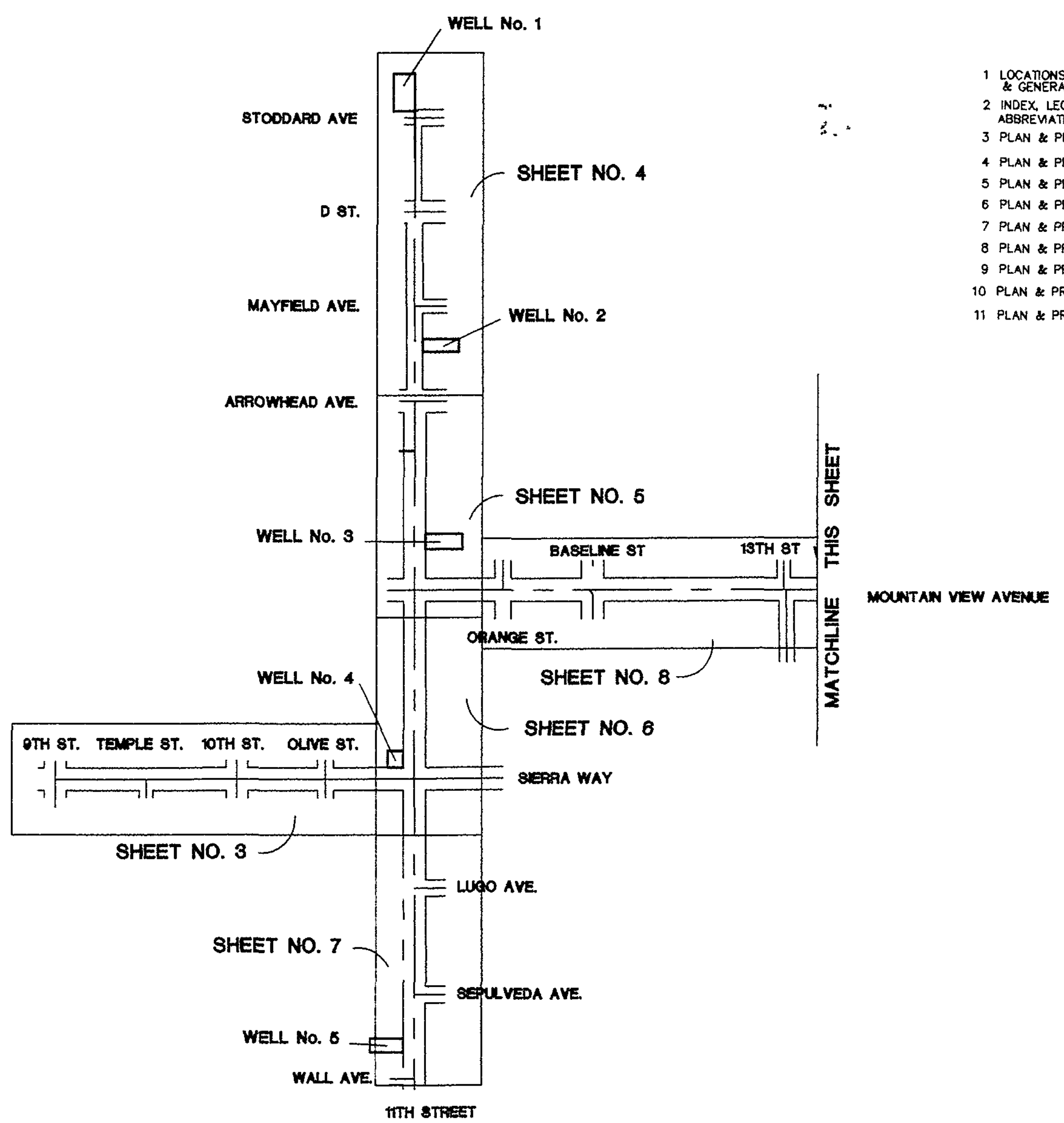
LOCATION MAPS
GENERAL NOTES

Scale:	Date:	Dwg. No.
NTS	SEPT 18, 1995	1

09/09/96
01 DWG
C/62370 60/DWG







SHEET INDEX

TITLE SHEET

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21 PLAN & PROFILE
22 MISC DETAILS
23 MISC DETAILS
24 MOUNTAIN VIEW AVE OVERCROSSING DETAILS
25 MOUNTAIN VIEW AVE OVERCROSSING DETAILS

LEGEND

- EXISTING BURIED FACILITY
- CENTERLINE
- RIGHT-OF-WAY LINE
- NEW PIPELINE
- MANHOLE
- GATE VALVE
- REDUCER
- BUTTERFLY VALVE
- COMBINATION AIR VALVE
- BLOW OFF

ABBREVIATIONS

ARV	AIR RELEASE VALVE	MJ	MECHANICAL JOINT
BF	BLIND FLANGE	NIC	NOT IN CONTRACT
BFV	BUTTERFLY VALVE	N C	NORMALLY CLOSED
BO	BLOW OFF	N O	NORMALLY OPEN
CAV	COMBINATION AIR VALVE	PRV	PRESSURE REDUCING VALVE
CL	CEMENT LINED	RCP	REINFORCED CONCRETE PIPE
℄	CENTERLINE	RED	REDUCER
D	DRAIN	RW	RIGHT-OF-WAY
DIP	DUCTILE IRON PIPE	S	SLOPE
E	ELECTRIC	SBCFCD	SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
ECC	ECCENTRIC	SS	SANITARY SEWER
FCA	FLANGED COUPLING ADAPTOR	STA	STATION
FLG	FLANGED	T	TELEPHONE
G	GAS	W	WATER
GB	GRADE BREAK	W/	WITH
INV	INVERT ELEVATION	WP	WRAPPED
LF	LINEAL FEET	WTP	WATER TREATMENT PLANT
LL	LAYOUT LINE		

BENCHMARK • A6-2
CITY OF SAN BERNARDINO DATUM BRASS DISK STAMPED "X-522 1956" @ SAN BDNO, @ THE S W CORNER OF SIERRA WAY & MARSHALL BLVD, IN THE TOP OF THE S E CORNER OF A CONCRETE FOUNDATION FOR A LIGHT STANDARD& OVERHEAD ST LITE EL=1240 802

BENCHMARK • A6-1
CITY OF SAN BERNARDINO DATUM BRASS DISK STAMPED "Q-522" @ SAN BERNARDINO, 265 0' N & 23' E OF THE C L INTERSECTION OF 30TH & SIERRA WAY, IN THE TOP OF THE E CONC CURB OPPOSITE 3052 SIERRA WAY
EL=1229 011

BENCHMARK • B5-3
CITY OF SAN BERNARDINO DATUM BRASS DISK STAMPED "CSB B5-3" @ THE OF THE N S SWALK 17' W OF THE W CURB OF SIERRA WAY, 7 5' S OF THE S CURB OF 27TH ST, 22 5' S & 40'WEST OF THE C L P I OF 27TH ST & SIERRA WAY
EL=1198 23

BENCHMARK • B3-4
CITY OF SAN BERNARDINO DATUM BRASS DISK STAMPED "CBM #43" @ THE BACK OF THE INTER-SECTION OF THE S/W; 7 5'S OF THE S CURBLINE OF BASELINE ST & 18 5'E OF THE E OF THE CURB LINE OF SIERRA WAY 40 5'SO &41 0' E OF THE C L P I OF BASELINE & SIERRA WAY EL=1094 537

BENCHMARK • A6-3
CITY OF SAN BERNARDINO DATUM BRASS DISK STAMPED "CBM #14" @ THE BACK OF SIDEWALK 16 0' N OF N CURBLINE OF BLVD & 12 3' E OF W CURB OF CENTER MEDIAN 41 0' N & 20 0' W OF ℄ INTERSECTION OF MARSHALL BLVD & MT VIEW AVE EL=1240 710

BASIS OF BEARINGS
ALL BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF MT VIEW AVE BETW FOUND MONUMENTS LOCATED @ RESPECTIVE ℄ OF 13TH ST (W) & 17TH ST (E) TAKEN AS NORTH (ASSUMED)

REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION

DESIGNED BY STL
DRAWN BY JW
CHECKED BY DHD

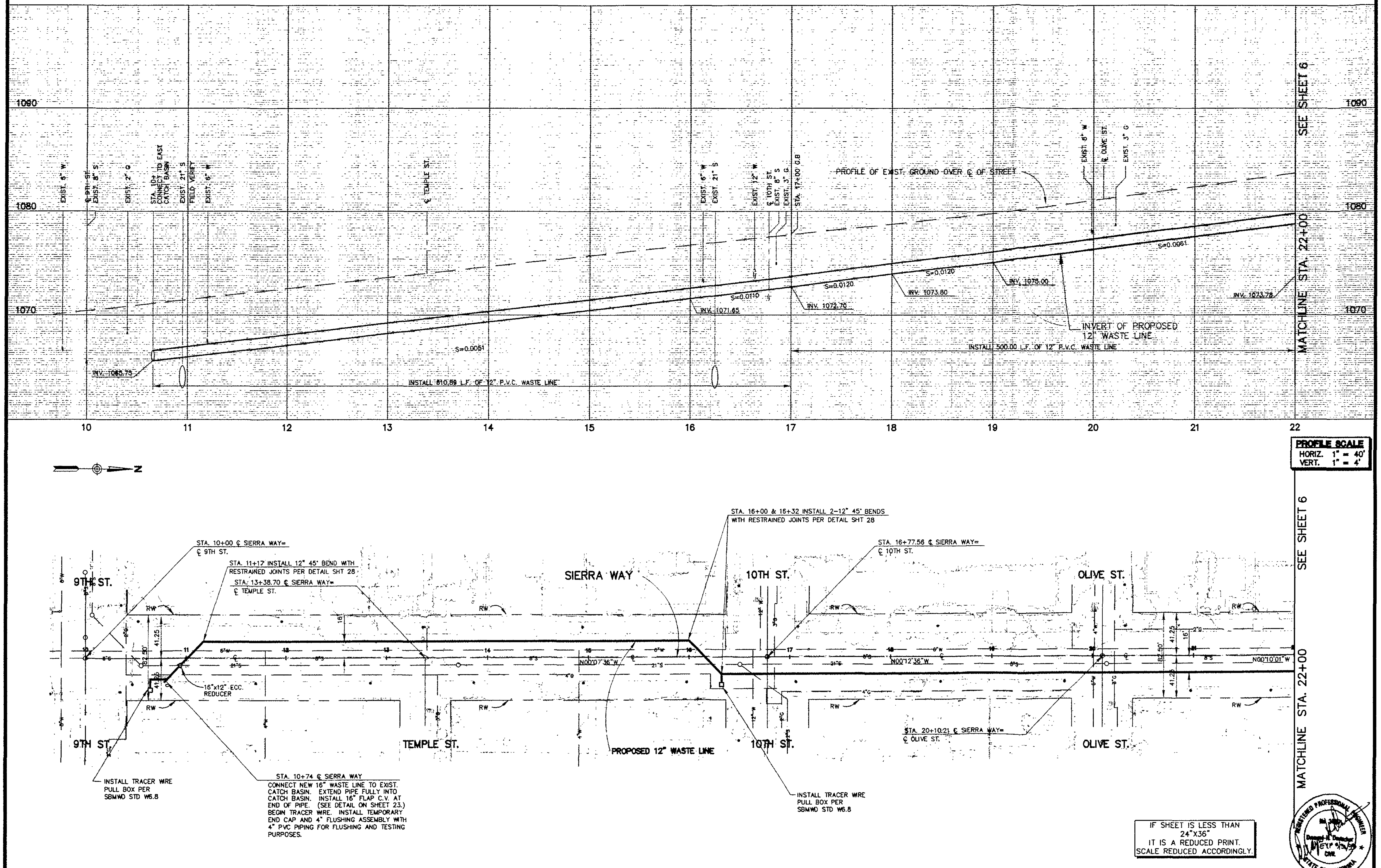
URS Consultants, Inc
CONSULTING ENGINEERS
SAN BERNARDINO CALIFORNIA
JOB NO 62370 60

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

INDEX, LEGEND AND ABBREVIATIONS

Scale: NTS | Date: SEPT 18 1996 | Dwg. No. 2

04/17/96
INDEX.DWG



IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — CIVIL

REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION

DESIGNED BY STL
DRAWN BY JW
CHECKED BY DHD

URS — URS Consultants, Inc. CONSULTING ENGINEERS SAN BERNARDINO CALIFORNIA

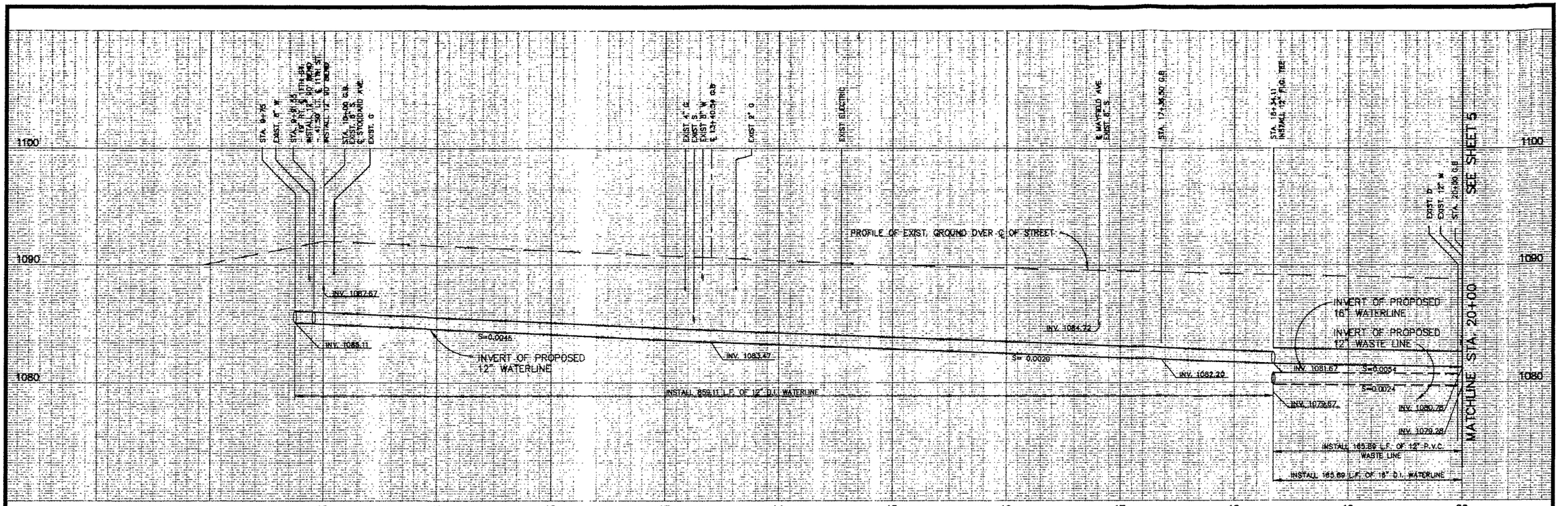
JOB NO.

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

PLAN AND PROFILE
SIERRA WAY
STA. 10+00 TO STA. 22+00

Scale: HORIZ. 1"=40' VERT. 1"=4' | Date: SEPT 18, 1996 | Dwg. No.: 3

7/8/96



REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION

DESIGNED BY STL
DRAWN BY JW
CHECKED BY DHD

URS Consultants, Inc.
CONSULTING ENGINEERS
SAN BERNARDINO CALIFORNIA

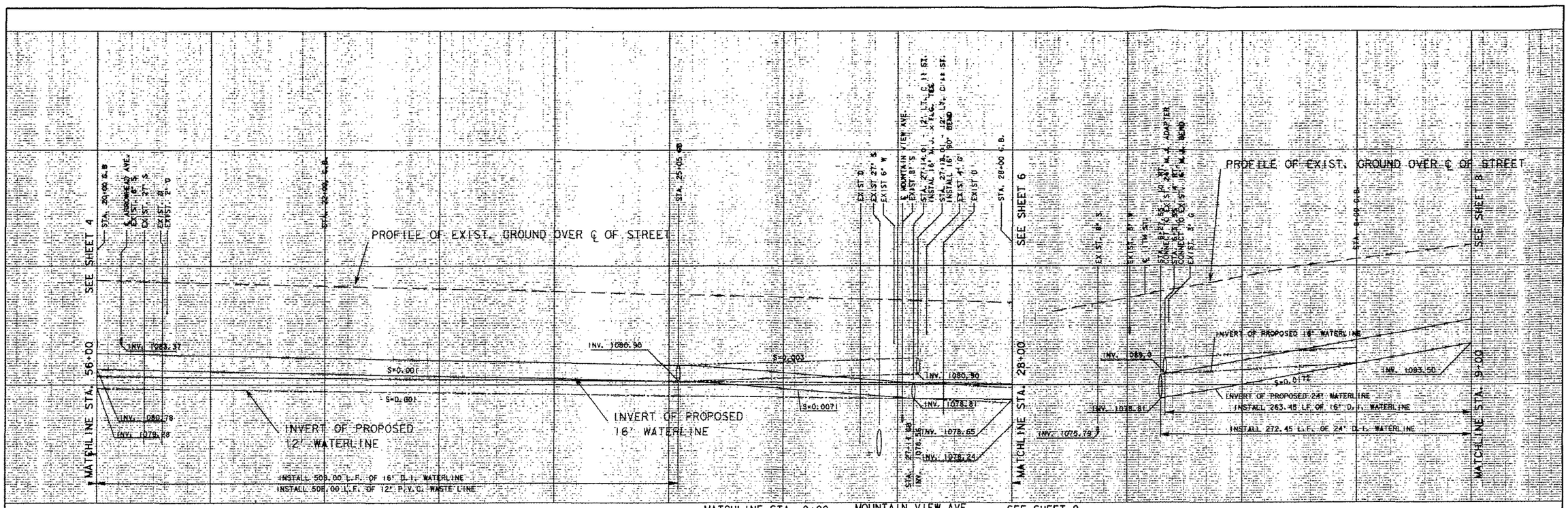
JOB NO. 62370.60

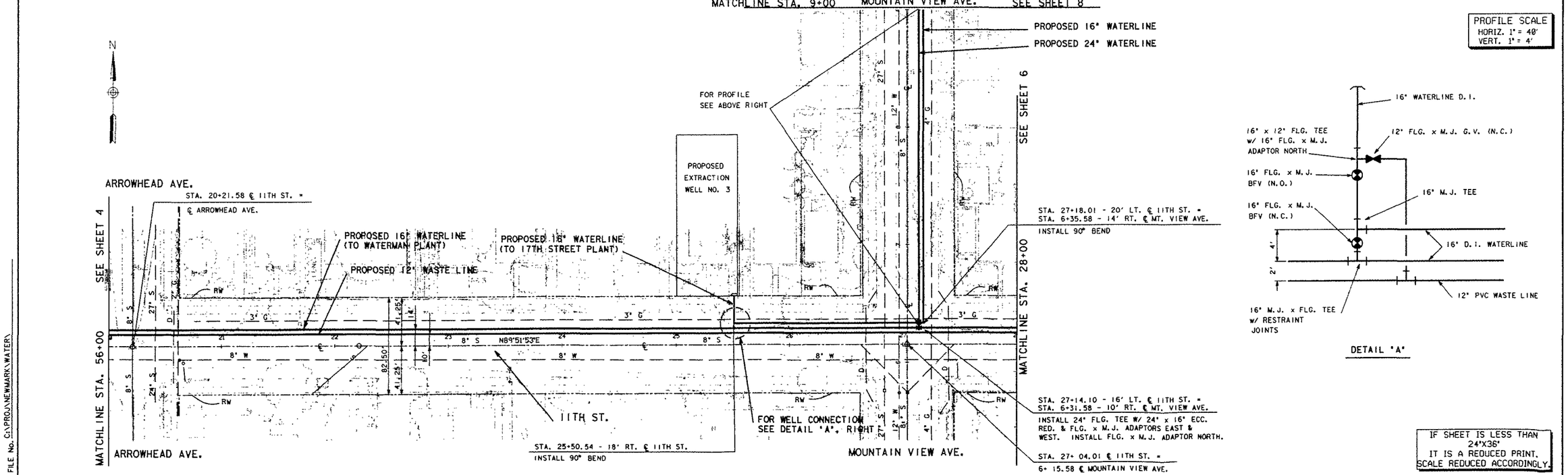
NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

PLAN AND PROFILE
11TH ST.
STA. 10+00 TO STA. 20+00

Scale:	Date:	Dwg. No.
HORIZ. 1"=40' VERT. 1"=4'	SEPT 18, 1996	4

04/17/96





IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

JOB No. 62370.60 FILE No. C:\PROJ\NEWMARK\WATER\

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: STL
DRAWN BY: JW
CHECKED BY: DHD

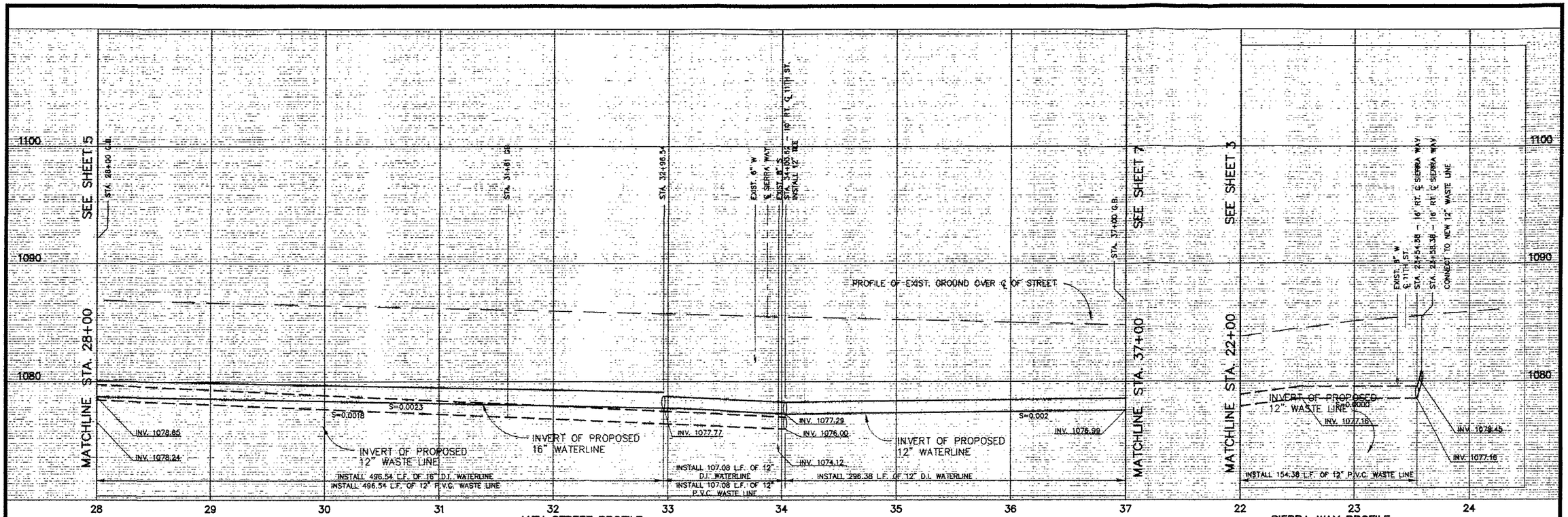
URS Consultants, Inc.
CONSULTING ENGINEERS
SACRAMENTO CALIFORNIA

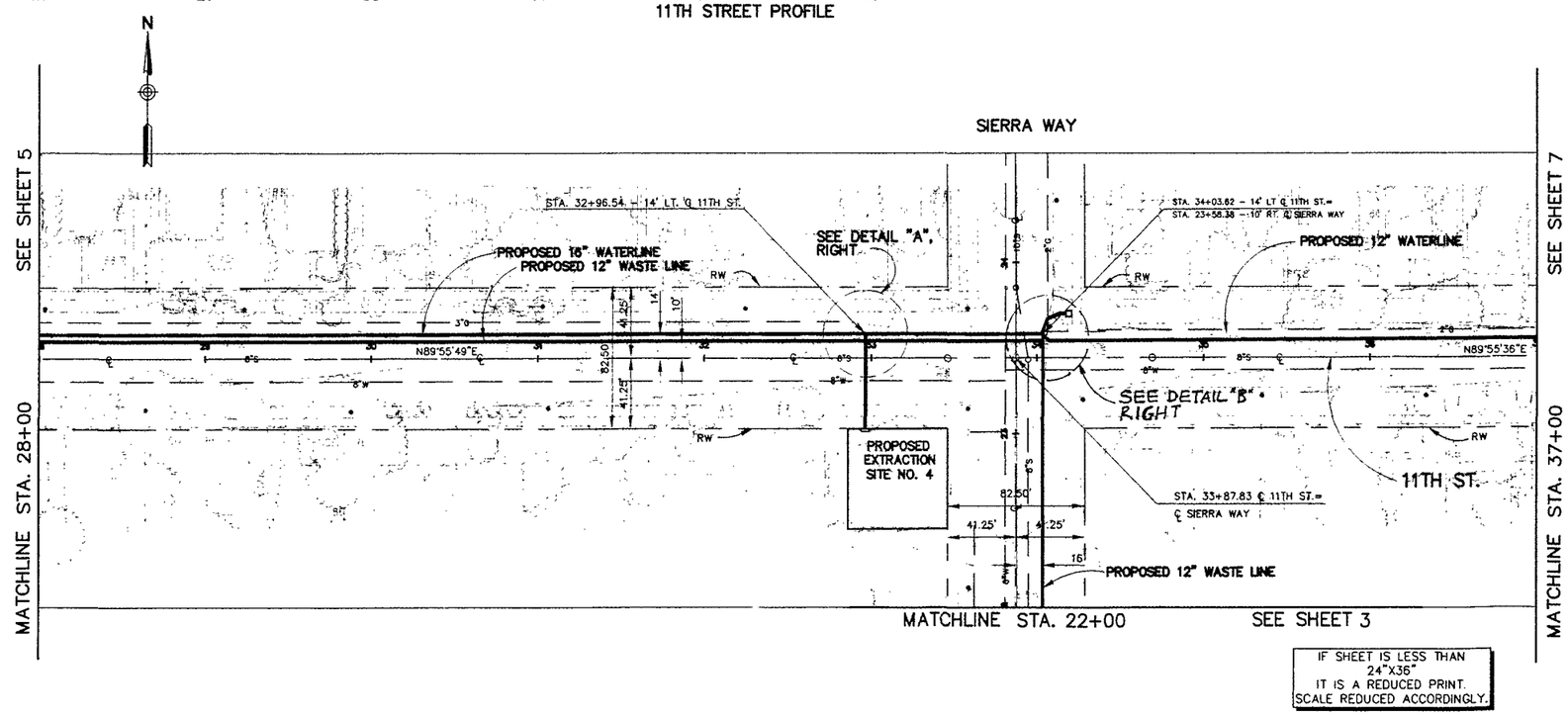
JOB No. 62370.60

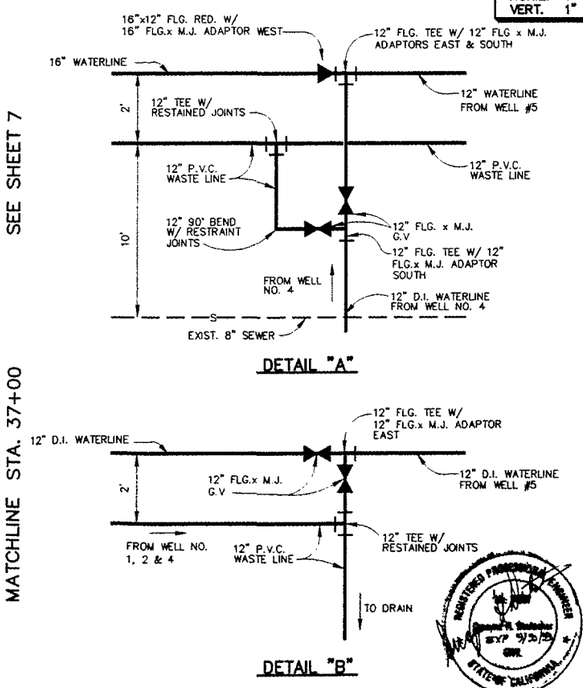
NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

PLAN AND PROFILE
11TH ST.
STA. 20+00 TO STA. 28+00
MOUNTAIN VIEW AVE.
STA. 6+00 TO STA. 8+00

Scale: HORIZ. 1"=40' VERT. 1"=4'
Date: SEPT 18, 1996
Dwg. No.: 5







PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION

04/29/96

DESIGNED BY STL
DRAWN BY JW
CHECKED BY DHD

URS Consultants, Inc.
CONSULTING ENGINEERS
SAN BERNARDINO CALIFORNIA

JOB NO.

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

PLAN AND PROFILE
11TH ST. STA. 28+00 TO STA. 37+00
SIERRA WAY STA. 22+00 TO 24+00

Scale:	Date:	Dwg. No.:
HORIZ. 1"=40' VERT. 1"=4'	SEPT 18, 1996	6

REGISTERED PROFESSIONAL ENGINEER
Stephen L. Stadelman
EXP. 9/30/98
CIVIL
STATE OF CALIFORNIA